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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JOHN WILLIAM VOGLER, LARRY WAYNE RENFRO,  
DAVID LEE LARKINS, and DAVID GEARL DOUTHAT

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Appeal 2008-2517  
Application 10/646,483  
Technology Center 1700

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Decided: July 14, 2008

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Before ROMULO H. DELMENDO, LINDA M. GAUDETTE, AND  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-5, 8, 9, 11-15, and 17-21. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The invention relates “to a method of adhering cellulose acetate tow to a paper to form a cigarette.” (Spec. 1, ll. 9-10.) Claims 1 and 12 are illustrative of the invention and are reproduced below:

1. A method of adhering two or more components together, the method comprising:

a) exposing to a plasticizing solvent at least one of:

- i) a first component that includes cellulose ester fibers, and
- ii) a second component that includes paper comprising cellulose and having a cellulose ester incorporated therein;

b) contacting the first component and the second component together to form a compound structure; and

c) curing the compound structure so that the first component and the second component become adhered together.

12. A method of making a filter, the method comprising:

a) exposing an aggregation of cellulose ester fibers to a plasticizing solvent;

b) contacting the aggregation of cellulose ester fibers exposed to the plasticizing solvent with a cellulose ester-containing substrate comprising paper having a cellulose ester incorporated therein; and

c) curing the aggregation of cellulose ester fibers contacted to the substrate so that the substrate is adhered to the aggregation of cellulose ester fibers.

The Examiner relies on the following prior art references to show unpatentability:

McIntosh

1,631,750

Jun. 7, 1927

Cobb, Jr. ('861)	3,025,861	Mar. 20, 1962
Cobb, Jr. ('501)	3,106,501	Oct. 8, 1963
Pearman	3,426,764	Feb. 11, 1969

The Examiner finally rejected the claims as follows (Ans. 2-3, ¶ (6)):

1. Claims 12-14 and 17-21 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh.
2. Claims 1-5, 8, and 11 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh and Pearman.
3. Claim 15 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh as applied to claims 12-14 and 17-21, and further in view of Cobb '501.
4. Claim 9 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh and Pearman as applied to claims 1-5, 8, and 11, and further in view of Cobb '501.

With respect to the first two grounds of rejection, Appellants do not present arguments which are reasonably specific to any particular claim. Accordingly, the dependent claims stand or fall together with independent claims 12 and 1, upon which they ultimately depend.

Appellants argue claims 1-5, 8, 11-14 and 17-21 as a group (*see* App. Br. 3-8), although claims 12 and 1, and the respective claims dependent therefrom, are subject to separate grounds of rejection (i.e., the first two grounds of rejection). We have considered all of these arguments with respect to each of the first two grounds of rejection, i.e., to the extent that they address limitations in claims 12 and 1. However, for the sake of

convenience, we have listed the arguments pertaining to Pearman under the heading which pertains to the second ground of rejection.

*(1) Rejection of claims 12-14 and 17-21 under 35 U.S.C. § 103  
as unpatentable over Cobb '861 in view of McIntosh*

The Examiner finds that Cobb '861 discloses the invention as claimed in claim 12 with the exception of a cellulose ester incorporated into the paper component. (Ans. 4.) However, the Examiner notes that Cobb '861 discloses coating the paper with cellulose acetate. (Ans. 4.) The Examiner further finds that McIntosh discloses a method of forming paper wherein cellulose acetate is incorporated into pulp fibers when forming the paper. (Ans. 4.) The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the paper wrapper of the Cobb '861 filter using McIntosh's method in order to improve its moisture repellency and durability. (Ans. 4-5.) The Examiner further notes that one of ordinary skill in the art would have been motivated to use McIntosh's method to reduce processing steps, i.e., to eliminate the Cobb '861 step of coating the paper with cellulose acetate. (Ans. 5.)

Appellants argue that the Examiner fails to identify proper motivation to combine the references in the manner claimed, noting in particular that: "there is no indication in [either of] the references [cited], or in the art generally, that [improving the] moisture repellency and durability of the paper of Cobb '861 would be an advantage" (Reply Br. 5); although McIntosh's process is said to be superior to *impregnation* processes, there is no indication the process would be preferable to the *coating* process of Cobb '861 (Reply Br. 5-6); there is no indication in either reference that the "somewhat flexible" paper products of McIntosh could be used as the paper

wrapper of Cobb '861 (App. Br. 6.); and one of ordinary skill in the art would not employ the waterproof material of McIntosh as a filtering material since it would impede the flow of cigarette smoke (App. Br. 8). Appellants thus contend that the Examiner's rejections are based on improper hindsight reasoning.

*(2) Rejection of claims 1-5, 8, and 11 under 35 U.S.C. § 103  
as unpatentable over Cobb '861 in view of McIntosh and Pearman*

The Examiner relies on the combined teachings of Cobb '861 and McIntosh (as applied to claim 12) for a disclosure of the invention as claimed in claim 1 with the exception of a specific teaching that the pulp fibers forming the paper are cellulose fibers. (Ans. 5.) The Examiner finds that Pearman discloses a method of forming paper wherein cellulose acetate is incorporated into cellulose pulp fibers. (Ans. 5.) The Examiner contends that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the pulp fibers of the paper taught by Cobb as modified by McIntosh those formed from cellulose as was well known in the art and shown by Pearman only the expected results of forming a paper being achieved.” (Ans. 5-6.)

Appellants argue that Pearman fails to cure the deficiencies in the Examiner's proposed combination of Cobb '861 and McIntosh (as discussed in connection with the rejection of claim 12). (App. Br. 7.) In addition, Appellants argue lack of motivation to combine Pearman with Cobb '861 because “Pearman suggests that the paper itself provides suitable filtration, . . . while Cobb '861 teaches the use of cellulose acetate filaments as the filtering material, with a wrapper paper having an adhesive applied to assist in adhering the paper to the filaments.” (App. Br. 7.) Appellants also argue

that “there is no motivation or suggestion to combine McIntosh with Pearman” because the waterproof material of McIntosh is incompatible with the moisture permeable filtration material of Pearman. (App. Br. 7-8.)

The contentions of the Examiner and the Appellants present the following issue: Have Appellants identified reversible error in the Examiner’s determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the paper wrapper of the Cobb ‘861 cigarette filter based on the teachings of McIntosh and Pearman to achieve the invention as claimed? We answer this question in the negative.

The following enumerated findings of fact (“FF”) are relevant to our consideration of this issue.

- 1) Cobb ‘861 discloses “a tobacco smoke filter prepared from crimped, continuous cellulose acetate filaments enclosed in a paper wrapper . . . wherein any by-passing between the wrapper and the filaments forming the filter is obviated or minimized.” (Cobb ‘861, col. 1, ll. 11-13.) Cobb ‘861 states that an object of the invention is to provide a filter having improved filtration efficiency and physical stability. (Cobb ‘861, col. 1, ll. 54-57.)
- 2) Cobb ‘861 utilizes “a plug (filament-filter) wrap paper coated with an adhesive by means of which the outer layer of filaments in the filter elements are made to adhere to the wrapping material.” (Cobb ‘861, col. 1, ll. 61-65.) According to Cobb ‘861, “[b]y thus fixing the position of the filaments at the periphery of the filter, the shrinkage associated with smoking, particularly with fine denier per filament tows, is eliminated. As a result, the smoke must pass through the

filter between the filaments and the tar removal is increased and more consistent.” (Cobb ‘861, col. 1, ll. 65-70.)

3) Cobb ‘861 states that the adhesive used to coat the paper wrapper may be “a plasticizer-soluble adhesive, [such as] a compound composed of a mixture of cellulose acetate and plasticizer.” (Cobb ‘861, col. 2, ll. 8-9.)

4) McIntosh discloses a method of making “a water-resistant fibrous sheet homogeneously impregnated with cellulose acetate” (McIntosh 2, ll. 7-9) in which “a cellulose ester is added to the pulp or rag fibres during processing” (McIntosh 1, ll. 20-22). Heat and pressure are applied to the sheet “for a time sufficient to cause the cellulose ester to fuse throughout the fibrous mass and to flow completely over the surface, forming a continuous coating.” (McIntosh 1, ll. 77-81.)

5) According to McIntosh, the “process gives a product in which the cellulose ester is intimately and uniformly dispersed throughout the fibres as well as upon the surface, resulting in a more water-proof and more durable product than has previously been possible by impregnation.” (McIntosh 1, ll. 25-31).

6) McIntosh states that “[c]onsiderable modification is possible in the processing of the paper and in the percentages of cellulose acetate used with no departure from the essential features of the invention.” (McIntosh 2, ll. 22-26.)

7) Pearman “relates to a paper cigarette filter, and to the composition of the paper used therein, for extracting from tobacco smoke deleterious ingredients including suspected carcinogenic substances.” (Pearman, col. 1, ll. 24-27.)

- 8) According to Pearman, "it has been found that the filter properties of a paper tobacco smoke filter can be improved by a substantial amount through the use of a filter paper having fibers of an acyl ester of cellulose incorporated therein." (Pearman, col. 2, ll. 39-43.)
- 9) Pearman states that one advantage of adding fibers of cellulose esters to the filter paper is that it reduces the amount of moisture that will be absorbed by the paper. (Pearman, col. 2, ll. 47-48.) Pearman notes that removing less moisture from the cigarette smoke presents a cooler smoke to the cigarette smoker. (Pearman, col. 2, ll. 50-52.)
- 10) Pearman discloses that "the presence of cellulose ester fibers in the paper filter can be used to improve the firmness or hardness of the filter." (Pearman, col. 2, ll. 52-54.) According to Pearman,

[t]his may be accomplished by applying bonding agents for the cellulose ester to the paper prior to its being formed into a filter rod. These bonding agents act to bond the cellulose ester fibers together at random points and thereby hold the filter in a fixed geometry. Thus the use of cellulose ester fibers in paper cigarette smoke filters permits the use of less material without the filter rods becoming too soft to process. This bonding may be effected by a plasticizer for the cellulose esters . . . .

(Pearman, col. 2, ll. 55-63.)

- 11) In Example 1, Pearman discloses a method of preparing paper containing cellulose acetate fibers which includes the step of blending chemical cellulose and cellulose acetate fibers in water. (Pearman, col. 4, ll. 8-13.) In Example 3, Pearman discloses spraying the Example 1 paper with a plasticizer prior to forming the paper into filter rods. (Pearman, col. 5, ll. 8-12.)

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007). An obviousness determination does not require a showing that all the features of one reference are capable of being physically incorporated into another reference. *In re Griver*, 354 F.2d 377, 381 (CCPA 1966); *In re Billingsley*, 279 F.2d 689, 691 (CCPA 1960). Similarly, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, but may be implicit. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000) (internal citations omitted); *see also, In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991) (test for obviousness is what the collective teachings of the prior art would have suggested to one of ordinary skill in the art). In other words, in an obviousness determination, it is appropriate to “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 127 S. Ct. at 1741.

Applying the foregoing principles of law, we find that the facts and reasons relied on by the Examiner provide a reasonable basis to conclude

that the invention, as claimed in claims 12 and 1, would have been obvious to one of ordinary skill in the art at the time of the invention based on the applied prior art. We have considered Appellants' arguments, but are not convinced of reversible error on the part of the Examiner. More specifically, we are not persuaded by Appellants' arguments because they focus on the explicit teachings of McIntosh and Pearman and, therefore, do not present an effective rebuttal to the Examiner's position, which is based on a determination of what the ordinary artisan would have reasonably inferred from the teachings of McIntosh and Pearman.

Turning first to McIntosh, Appellants essentially argue that McIntosh does not disclose the type of paper products that one of ordinary skill in the art would contemplate for use as a cigarette filter wrapper. (*See, e.g.*, App. Br. 6.) Appellants point out that McIntosh is primarily concerned with manufacturing a hard, durable, compact, and waterproof material (App. Br. 5 and 6), i.e., features which are undesirable in a cigarette filter wrapper (*see, e.g.*, App. Br. 4 and Reply Br. 8). Appellants concede that McIntosh indicates that the material is suitable for use as a raw material in "structures which it is desirable shall be unaffected by moisture, oil or other liquids." (App. Br. 5 (citing McIntosh 2, ll. 10-21.)) However, Appellants maintain that there is no indication that the material would serve as a functional replacement for the filter paper of Cobb '861. (App. Br. 6.)

Contrary to Appellants' contention, the Examiner's rejection is not based on a finding that McIntosh explicitly discloses a substitute for the Cobb '861 plug (filament-filter) paper wrapper. Rather, the Examiner relies on McIntosh for a disclosure of a method of forming a "paper product ha[ving] a wide range of flexibilities as a function of the amount of cellulose

acetate used.” (Ans. 8; *see* FF 6.) Appellants have not explained why the Examiner erred in finding that one of ordinary skill in the art would have reasonably inferred that such method could be used to manufacture a paper product suitable for use as the Cobb ‘861 cigarette paper wrapper by adjusting the amount of cellulose acetate to achieve a desired level of flexibility (*see* Ans. 8). Nor have Appellants established that it would not have been within the knowledge or capability of the ordinary artisan to modify McIntosh’s process so as to achieve a product having the desired degree of flexibility and moisture permeability required in the Cobb ‘861 cigarette paper wrapper. (*See* Ans. 9-10; Ans. 5 (discussing routine experimentation).) Moreover, Appellants have neither provided evidence to establish, nor explained why one of ordinary skill in the art would expect that a paper manufactured using McIntosh’s method would not function in substantially the same manner as the Cobb ‘861 coated paper wrapper. (*See* Ans. 10-11.)

For example, Appellants have not shown that the coating of cellulose acetate formed in McIntosh’s method (FF 4) would not provide substantially the same adhesive strength as the cellulose acetate coating (FF 3) on the Cobb ‘861 paper filter (Ans. 11; *see* App. Br. 6), or shown a difference in moisture permeability between the Cobb ‘861 coated paper wrapper and a paper product produced by McIntosh’s method. Further, Appellants have not shown that any differences in adhesive strength or moisture permeability would have dissuaded one of ordinary skill in the art from using McIntosh’s method to produce a paper wrapper for use in the Cobb ‘861 filter. (*See* Ans. 8 (noting that McIntosh does not teach away).)

With respect to Pearman, Appellants essentially argue that because Pearman's paper is itself a filter, its use as a paper wrapper for adhering the filter elements of Cobb '861 would be unnecessary and duplicative. (App. Br. 7.) Appellants have not, however, attempted to refute the Examiner's finding that one of ordinary skill in the art would have understood from Pearman that cellulose fibers may be used as the pulp fibers in forming a cigarette paper wrapper (Ans. 5-6) and would provide various advantages to a paper wrapper (FF 8-10). In other words, Appellants have not explained why the Examiner erred in concluding that it would have been obvious to have used a well known type of fibers, i.e., cellulose (as taught by Pearman), as the pulp and rag fibers in the Cobb/McIntosh paper wrapper (Ans. 12).

In view of the foregoing, we sustain the Examiner's rejections of appealed claims 1 and 12, as well as claims 2-5, 8, 11, 13, 14, and 17-21.

- (3) *Rejection of claim 15 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh as applied to claims 12-14 and 17-21, and further in view of Cobb '501 and*
- (4) *Rejection of claim 9 under 35 U.S.C. § 103 as unpatentable over Cobb '861 in view of McIntosh and Pearman as applied to claims 1-5, 8, and 11, and further in view of Cobb '501*

Appellants do not present any additional substantive arguments in traversing the rejections of claims 15 and 9. (See App. Br. 8.) Accordingly, we likewise sustain the Examiner's rejections of these claims for the same reasons discussed in connection with claims 12 and 1, from which these claims depend.

ORDER

The decision of the Examiner rejecting claims 1-5, 8, 9, 11-15, and 17-21 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

PL Initial:  
sld

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